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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/829,241	04/09/2001	Yoshiaki Ogata	10873.661US01	7594

23552 7590 05/16/2003

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EXAMINER

CANTELMO, GREGG

ART UNIT PAPER NUMBER

1745

7

DATE MAILED: 05/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/829,241

Applicant(s)

OGATA ET AL.

Examiner

Gregg Cantelmo

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HC
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. In response to the amendment received April 29, 2003:
 - a. Claims 5 and 7 have been cancelled. Claims 1-4, 6 and 8 are pending;
 - b. The 112 rejection has been withdrawn in light of the amendment;
 - c. The 102 rejections of Tomino and Ido presented in the previous office action stand. All other 102 rejection of the previous office action have been withdrawn;
 - d. The 103 rejections presented in the previous office action stand.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. patent No. 4,436,792 (Tomino).

Tomino discloses of a battery chamber (battery mount) for battery modules comprising a frame body 120 having a plurality of openings (chambers 122 and 123) into which the battery modules 10a and 10b are inserted and

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removed (Fig. 9). The frame body 120 has unevenness where the terminals 126a and 128a contact the batteries 10a and 10b. While the particulars of the battery are not germane to the mount frame, note that the batteries also have unevenness at the terminal contact points (Figs. 9 and 10 as applied to claim 1).

With respect to the rectangular shape of the battery modules, the Examiner has not accorded the battery module shape any weight to the apparatus since it does not positively define any additional structure to the mount frame. Although the battery modules are rectangular, this does not explicitly define the openings for holding the battery modules to be only rectangular in shape. Furthermore the battery modules are not a requisite component for the claimed mount frame and rather is an intended use for the mount frame. Therefore the limitations of the battery module are not accorded weight to the structure of the claimed invention, a battery mount frame.

Connecting terminals 126a, 136a, 136b, and 128a are engaged and electrically connect to the electrode terminals of the battery modules 10a and 10b (Figs. 9 and 10 as applied to claim 6).

The engaging surface unevenness of each module has a complimentary shape and orientation to the engaging surface unevenness of the opening (Figs. 9 and 10 as applied to claim 8).

Response to Arguments

4. Applicant's arguments filed April 29, 2003 have been fully considered but they are not persuasive. In particular:

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Applicant argues that Tomino does not anticipate the unevenness limitations of the mount frame and battery as recited in claim 1.

The Examiner respectfully disagrees.

Claim 1 does not specify the degree of unevenness on the inner surface of the mount frame openings nor of the degree of unevenness on the surface of each battery module.

Therefore a teaching of a portion of the inner surface of the mount frame openings and unevenness of the battery modules is still held to anticipate claim 1 as set forth above.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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6. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent No. 6,326,103 (Ido).

Ido discloses a battery mount frame for battery modules, for fixing a plurality of rectangular battery modules 1, comprising a frame 20 having a plurality of openings (defined by partition members 30) into which the modules are inserted and removable (Figs. 1 and 2 as applied to claim 1). The mount frame has unevenness (steel beams 32, openings 28) and the battery modules 1 have unevenness (Fig. 3). The ribs 14 of the battery modules slide along the surface of the second planes 22b of the beams 32 of the top plate 21 and the bottom plate, so that the bottom of the battery is located on and secured by suspended pieces of 34 of the top plate 21 and the bottom plate 22. The unevenness of the battery modules and top and bottom plates of the mount frame is shown to be engaged (col. 8, ll. 50-59 as applied to claim 1).

The outer surface of lid 21 of the mount frame (Fig. 2) provides a surface upon which additional mount frames can be stacked upon as shown in Fig. 7 (applied to claim 2).

The frame is made of metal (col. 3, ll. 43-51) and the mount frame 20 further comprises cooling channels defined by steel cross beams 32 (Figs. 4 and 5 as applied to claim 3).

The steel beams 32 define coolant channels (Figs. 4 and 5 as applied to claim 4).

Response to Arguments

7. Applicant's arguments filed April 29, 2003 have been fully considered but they are not persuasive. In particular:

Applicant argues that Ido does not anticipate the unevenness limitations of the mount frame and battery as recited in claim 1.

The Examiner respectfully disagrees.

Claim 1 does not specify the degree of unevenness on the inner surface of the mount frame openings nor of the degree of unevenness on the surface of each battery module.

Therefore a teaching of a portion of the inner surface of the mount frame openings and unevenness of the battery modules is still held to anticipate claim 1 as set forth above.

In addition the Examiner does not agree with Applicant's interpretation of the term engaged. Ido teaches of battery mount surfaces and battery surfaces both of which have unevenness and are in contact with one another (see Figs. 1 and 2 for example wherein the steel beams 32 are disposed along the surfaces which face the battery modules; also see col. 8, ll. 47-59). The fact that they are in contact is held to be a reasonable interpretation of the term engaged.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '751 in view of Ido.

JP '751 discloses a battery mount frame for battery modules, for fixing a plurality of rectangular battery modules, comprising a frame 1 having a plurality of openings 12 into which the modules are inserted and removable (Figs. 1-3 and 6 as applied to claim 1).

The differences between instant claim 5 and JP '751 are that JP '751 does not disclose of the frame having unevenness on an inner surface of each opening which is engaged to battery modules having unevenness.

Ido discloses of a modular battery system wherein the battery modules have ribs formed on the surface of each module and thus constitutes battery modules having uneven surfaces (Fig. 3).

The mount frame comprises a plurality of beams 32 and punched openings 28 (Fig. 4) and thus constitutes a mount frame having unevenness.

The mount frame has unevenness (steel beams 32, openings 28) and the battery modules 1 have unevenness (Fig. 3). The ribs 14 of the battery modules slide along the surface of the second planes 22b of the beams 32 of the top plate 21 and the bottom plate, so that the bottom of the battery is located on and secured by suspended pieces of 34 of the top plate 21 and the bottom plate 22. The unevenness of the battery modules and top and bottom plates of the mount frame is shown to be engaged (col. 8, ll. 50-59 as applied to claim 1).

The motivation for providing an uneven surface to the mount frame and battery modules is to control the temperature of the battery modules and equalize the temperature of the adjoining batteries (col. 9, ll. 10-19).

The motivation for engaging the unevenness of the battery modules and the unevenness of the mount frame is to secure the battery in the mount frame (col. 8, ll. 50-59).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '751 by providing an uneven surface to the mount frame since it would have controlled the temperature of the battery modules and equalized the temperature of the adjoining batteries.

It would have additionally been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '751 by engaging the unevenness of the battery modules and the unevenness of the mount frame since it would have secured the battery in the mount frame.

10. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stone in view of Ido.

Stone discloses a battery mount frame 72 for battery modules, for fixing a plurality of rectangular battery modules, comprising a frame having a plurality of openings 76 into which the modules are inserted and removable (Fig. 4 as applied to claim 1).

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The upper surfaces of each tier of the assembly in Fig. 1 is held to be a stacking member for stacking a plurality of frames 72 on each other (Fig. 4 as applied to claim 2).

The differences between instant claim 1 and Stone are that Stone does not disclose of the frame having unevenness on an inner surface of each opening which is engaged to the battery modules having unevenness.

Ido discloses of a modular battery system wherein the battery modules have ribs formed on the surface of each module and thus constitutes battery modules having uneven surfaces (Fig. 3).

The mount frame comprises a plurality of beams 32 and punched openings 28 (Fig. 4) and thus constitutes a mount frame having unevenness.

The mount frame has unevenness (steel beams 32, openings 28) and the battery modules 1 have unevenness (Fig. 3). The ribs 14 of the battery modules slide along the surface of the second planes 22b of the beams 32 of the top plate 21 and the bottom plate, so that the bottom of the battery is located on and secured by suspended pieces of 34 of the top plate 21 and the bottom plate 22. The unevenness of the battery modules and top and bottom plates of the mount frame is shown to be engaged (col. 8, ll. 50-59 as applied to claim 1).

The motivation for providing an uneven surface to the mount frame and battery modules is to control the temperature of the battery modules and equalize the temperature of the adjoining batteries (col. 9, ll. 10-19).

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The motivation for engaging the unevenness of the battery modules and the unevenness of the mount frame is to secure the battery in the mount frame (col. 8, ll. 50-59).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Stone by providing an uneven surface to the mount frame since it would have controlled the temperature of the battery modules and equalized the temperature of the adjoining batteries.

It would have additionally been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Stone by engaging the unevenness of the battery modules and the unevenness of the mount frame since it would have secured the battery in the mount frame.

11. Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belanger in view of Ido.

Belanger discloses a mount frame 15 for battery modules, for fixing a plurality of rectangular battery modules 20a-20h comprising a frame 15 having a plurality of openings into which the modules are inserted and removed (Fig. 2 as applied to claim 1).

Frame top 16 has a planar surface which is held as a stacking member whereupon a plurality of frames can be stacked upon. Note that the claim does not define structure apart from a member which can function such that plural frames can be stacked on the member. The planar surface 16 of the top of

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Belanger is held to be a surface upon which addition frames can be stacked (Fig. 2 as applied to claim 2).

Connecting terminals 38a-c engage with and electrically connect to electrode terminals of the battery modules when disposed in the battery module openings (Fig. 3 as applied to claim 6).

The differences between instant claim 1 and Belanger are that Belanger does not disclose of the frame having unevenness on an inner surface of each opening which is engaged to the battery modules having unevenness.

Ido discloses of a modular battery system wherein the battery modules have ribs formed on the surface of each module and thus constitutes battery modules having uneven surfaces (Fig. 3).

The mount frame comprises a plurality of beams 32 and punched openings 28 (Fig. 4) and thus constitutes a mount frame having unevenness.

The mount frame has unevenness (steel beams 32, openings 28) and the battery modules 1 have unevenness (Fig. 3). The ribs 14 of the battery modules slide along the surface of the second planes 22b of the beams 32 of the top plate 21 and the bottom plate, so that the bottom of the battery is located on and secured by suspended pieces of 34 of the top plate 21 and the bottom plate 22. The unevenness of the battery modules and top and bottom plates of the mount frame is shown to be engaged (col. 8, ll. 50-59 as applied to claim 1).

The motivation for providing an uneven surface to the mount frame and battery modules is to control the temperature of the battery modules and equalize the temperature of the adjoining batteries (col. 9, ll. 10-19).

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The motivation for engaging the unevenness of the battery modules and the unevenness of the mount frame is to secure the battery in the mount frame (col. 8, ll. 50-59).

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Belanger by providing an uneven surface to the mount frame since it would have controlled the temperature of the battery modules and equalized the temperature of the adjoining batteries.

It would have additionally been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Belanger by engaging the unevenness of the battery modules and the unevenness of the mount frame since it would have secured the battery in the mount frame.

12. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa in view of Ido.

Nishikawa discloses a battery mount frame for battery modules, for fixing a plurality of rectangular battery modules, comprising a frame 1 having a plurality of openings 12 into which the modules are inserted and removable (Figs. 1-3 and 6 as applied to claim 1).

All of the front and rear frame elements 33 and 34, the left and right frame elements 35 and 36, the center frame 37 and the frame elements 40 and 41 are made of lightweight metal such as aluminum alloy and formed in a of rectangular closed section by an extruder and the mount frame comprises coolant members 13 and 7 (col. 7, ll. 1-5, and Fig. 1 as applied to claim 3).

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The coolant member is at least one selected from the group consisting of a cooling fin and a coolant channel (Fig. 1 as applied to claim 4).

The differences between instant claim 1 and Nishikawa are that Nishikawa does not disclose of the frame having unevenness on an inner surface of each opening which is engaged to the battery modules having unevenness.

Ido discloses of a modular battery system wherein the battery modules have ribs formed on the surface of each module and thus constitutes battery modules having uneven surfaces (Fig. 3).

The mount frame comprises a plurality of beams 32 and punched openings 28 (Fig. 4) and thus constitutes a mount frame having unevenness.

The mount frame has unevenness (steel beams 32, openings 28) and the battery modules 1 have unevenness (Fig. 3). The ribs 14 of the battery modules slide along the surface of the second planes 22b of the beams 32 of the top plate 21 and the bottom plate, so that the bottom of the battery is located on and secured by suspended pieces of 34 of the top plate 21 and the bottom plate 22. The unevenness of the battery modules and top and bottom plates of the mount frame is shown to be engaged (col. 8, ll. 50-59 as applied to claim 1).

The motivation for providing an uneven surface to the mount frame and battery modules is to control the temperature of the battery modules and equalize the temperature of the adjoining batteries (col. 9, ll. 10-19).

The motivation for engaging the unevenness of the battery modules and the unevenness of the mount frame is to secure the battery in the mount frame (col. 8, ll. 50-59).

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Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Nishikawa by providing an uneven surface to the mount frame since it would have controlled the temperature of the battery modules and equalized the temperature of the adjoining batteries.

It would have additionally been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of Nishikawa by engaging the unevenness of the battery modules and the unevenness of the mount frame since it would have secured the battery in the mount frame.

Response to Arguments

13. Applicant's arguments filed April 29, 2003 have been fully considered but they are not persuasive. In particular:

Applicant argues that Ido does not anticipate the unevenness limitations of the mount frame and battery as recited in claim 1.

See item 6 above incorporated herein. Therein the Examiner maintains that Ido still reads on the engaging relationship as defined by claim 1 and therefore the 103 rejections employing Ido as the secondary reference showing this relationship are still applied.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is (703) 305-0635. The examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (703) 308-2383. FAX communications should be sent to the appropriate FAX number: (703) 872-9311 for After Final Responses only; (703) 872-9310 for all other responses. FAXES received after 4 p.m. will not be processed until the following business day. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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Gregg Cantelmo
Patent Examiner
Art Unit 1745

gc

May 12, 2003


Patrick Ryan
Supervisory Patent Examiner
Technology Center 1700